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TROCHOCYATHUS WOOLMANI, A NEW CORAL FROM THE CRETACEOUS OF NEW JERSEY.

BY T. WAYLAND VAUGHAN.

The two specimens upon which the description of the following species is based were sent me from the Academy of Natural Sciences of Philadelphia in compliance with the request of Mr. Lewis Woolman:

Trochocyathus woolmani sp. nov.

1898. *Platytrochus speciosus* C. W. Johnson, Geol. Survey N. J., Ann. Rep. for 1897, p. 265 (in Lewis Woolman's Report on Artesian Wells in New Jersey).

1898. *Platytrochus speciosus* C. W. Johnson, Proc. Acad. Nat. Sci. Phila., 1898, p. 462 (non *Platytrochus speciosus* Gabb and Horn, Jour. Acad. Nat. Sci. Phila., 2d ser., Vol. IV, 1860, p. 399, Pl. LXIX, figs. 15-17).

Corallum short, inversely conical, living attached, transverse outline circular.

Dimensions.—Diameter of calice, 3.5 mm.; altitude of corallum, 4 mm.; diameter of area of attachment, 1 mm. Wall rather thick, naked, ornamented externally by twenty-four costæ, corresponding to all cycles of septa, and showing a fairly regular alternation of larger and smaller—*i.e.*, there are twelve larger costæ of the same size corresponding to the septa of the first and second cycles, and twelve smaller corresponding to the septa of the third cycle. Near the calice they are prominent, with acute edges and broad bases; as the base of the corallum is approached they decrease in prominence. They possess granulations along their edges, and some scattered granulations on the sides.

There are three cycles of septa, divided into six systems. The members of the first cycle are appreciably larger than the other septa, and pass directly from the corallum wall to the columella space without forming part of any septal group. The members of the third cycle bend toward the members of the second, and fuse to the sides of the latter below the level of the calice. The septal margins project very slightly above the upper edge of the corallum wall. The septal faces are ornamented with distant subconical granulations.

The inner end of each of the primary septa is thickened, the thickening apparently representing a palus, and before each group of the members of the second and third cycles is what appears to be a slender palus; therefore, there are apparently slender pali before the septa of the first and second cycles.

The columella is not large; it is fasciculate, with a papillary upper termination.

The calicular fossa is shallow.

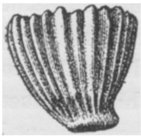

Fig. 1.

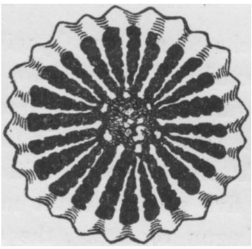

Fig. 2.

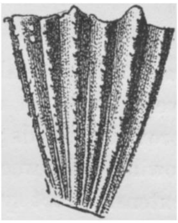

Fig. 3.

Figs. 1 and 2 drawn from the type (No. 685, Acad. Nat. Sci. Phila.). Fig. 1, upright view of corallum, altitude of specimen 4 mm. Fig. 2, calicular view of the same, diameter of calice 3.5 mm. Fig. 3, costæ of another specimen, much enlarged, length specimen 4 mm.

Locality.—From artesian well, Mt. Laurel, N. J., between 150 and 160 feet below the surface.

Geological horizon.—Cretaceous, Matawan clay marls.[1]

Type.—No. 685, Acad. Nat. Sci. Phila.

Mr. C. W. Johnson had identified this species with *Platytrochus speciosus* Gabb and Horn,[2] but it certainly is not that species. According to Gabb, *Platytrochus speciosus* is .5 in. high and the calice is .57 in. in diameter. It would be three times as large as *Trochocyathus woolmani*, besides it possesses a deep calice. It should be added that *Platytrochus speciosus* is certainly no *Platytrochus*, and it is impossible to identify it from Gabb's description or figures. The type, I believe, is at the Vanderbilt University, Nashville, Tenn., but I have been unable to see it. As I could not by any means find out what Gabb meant, I have discarded the species altogether. The species is almost surely not Cretaceous but Eocene.

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[1] L. Woolman, *Geol. Surv. N. J. Ann. Rep.* for 1897, 1898, p. 262 ; C. W. Johnson, *Proc. Acad. Nat. Sci. Phila.* for 1898, p. 461.

[2] *Jour. Acad. Nat. Sci. Phila.*, 2d ser., Vol. IV, 1860, p. 399, Pl. LXIX, figs. 15, 16, 17.